

- 35 -

## CLAIMS

1. A wireless communication system having first  
and second wireless communication devices, wherein  
said first wireless communication device

5 comprises:

detection means for detecting a beacon at each  
frequency;

search means for searching for a wireless  
communication device which has a predetermined function,  
10 and is present on a network identified by network  
identification information contained in the beacon  
detected by said detection means, in accordance with  
the network identification information; and

display means for selectably displaying  
15 information associated with the wireless communication  
device detected by said search means so as to determine  
a wireless communication partner,

said second wireless communication device  
comprises:

20 transmission means for, when search request  
information is detected in a wireless reception waiting  
state at a predetermined frequency, transmitting  
information including self identification information  
as response information, and

25 when information of said second wireless  
communication device displayed by said display means is  
selected, a process for establishing a communication

- 36 -

between said first and second wireless communication devices is executed.

2. A wireless communication device comprising:  
detection means for detecting a beacon at each  
5 frequency;

search means for searching for a wireless communication device which has a predetermined function, and is present on a network identified by network identification information contained in the beacon  
10 detected by said detection means, in accordance with the network identification information; and

display means for selectably displaying information associated with the wireless communication device detected by said search means so as to determine  
15 a wireless communication partner.

3. The device according to claim 2, wherein said search means transmits search request information in accordance with the network identification information included in the beacon detected by said detection means  
20 so as to search for the wireless communication device having the predetermined function, and stores in a memory identification information of a wireless communication device on a partner side included in a response to the search request information upon  
25 reception of the response, and

said display means selectably displays the identification information stored in the memory.

- 37 -

4. The device according to claim 2, wherein each of the wireless communication device and the partner wireless communication device comprises one of an image sensing device, a device for executing a print process  
5 of a sensed image, and a storage device for executing a storage process of a sensed image.

5. The device according to claim 2, wherein when one of information displayed by said display means is selected before beacons for all frequencies are  
10 detected, subsequent detection processes are aborted, and a connection process with a wireless communication device specified by the selected information is executed.

6. The device according to claim 2, wherein when  
15 no partner wireless communication device is found within a predetermined period of time, an error display is made.

7. The device according to claim 2, further comprising:  
20 determination means for determining if the beacon detected by said detection means is a beacon in an adhoc communication mode or a beacon in an infrastructure communication mode, and

in that when said determination means determines  
25 that the detected beacon is the beacon in the adhoc communication mode, said search means transmits search request information toward a wireless communication

- 38 -

processing device as a generation source of that beacon,  
and

when said determination means determines that the  
detected beacon is the beacon in the infrastructure  
5 mode, said search means transmits search request  
information of a wireless communication processing  
device toward an access point.

8. The device according to claim 2, further  
comprising registration means for registering, in a  
10 memory, information associated with connection to the  
partner wireless communication device, to which the  
wireless communication has been established.

9. The device according to claim 8, further  
comprising a mode for executing a process for  
15 establishing a wireless communication on the basis of  
the information registered by said registration means.

10. A wireless communication device comprising:  
storage means for storing device identification  
information and network identification information of a  
20 partner to which the self wireless communication device  
has been connected previously;

instruction means for instructing one of a  
history search mode that communicates with a desired  
partner wireless communication device stored in said  
25 storage means, and a new search mode that searches for  
a partner wireless communication device via a wireless

- 39 -

communication, and communicates with the found partner wireless communication device;

beacon detection means for, when said instruction means instructs the new search mode, detecting a

5 beacon;

search means for comparing network identification information included in the detected beacon with the network identification information stored in said storage means, making said detection means detect  
10 another beacon if the two pieces of network identification information match, and searching for a partner wireless communication device to communicate with based on new network identification information if the new network identification information is detected;

15 first display means for selectably displaying one device identification information found by said search means;

second display means for, when said instruction means instructs the history search mode, selectably  
20 displaying the device identification information stored in said storage means; and

wireless communication establishment process means for, when one device identification information displayed by one of said first and second display means  
25 is selected, executing a wireless communication establishment process on the basis of the selected device identification information.

- 40 -

11. A wireless communication system having first and second wireless communication devices, wherein said first wireless communication device comprises:

5       determination means for determining a designated process type; and

      display means for displaying information associated with a device having a function of the process type determined by said determination means on  
10   the basis of signals informed by another devices,

      said second wireless communication device comprises:

      informing means for informing of device identification information indicating a self function,  
15   and

      when information of said second wireless communication device displayed by said display means is selected, a process for establishing a communication between said first and second wireless communication  
20   devices is executed.

12. A wireless communication device comprising:

      determination means for determining a designated process type; and

      display means for displaying information  
25   associated with a device having a function of the process type determined by said determination means on the basis of signals informed by another devices.

- 41 -

13. A method of controlling a wireless communication device, comprising:

a detection step of detecting beacons at a plurality of frequencies;

5 a search step of searching for a wireless communication device which has a predetermined function, and is present on a network identified by network identification information contained in the beacon detected in the detection step, in accordance with the  
10 network identification information; and

a display step of selectably displaying information associated with the wireless communication device detected in the search step so as to determine a wireless communication partner.

15 14. A method of controlling a wireless communication device, comprising:

a storage step of storing, in a memory, device identification information and network identification information of a partner wireless communication device  
20 which has been connected previously;

a determination step of determining an operator's instruction that instructs one of a history search mode that communicates with a desired partner wireless communication device stored in the memory, and a new  
25 search mode that searches for a partner wireless communication device via a wireless communication, and

- 42 -

communicates with the found partner wireless communication device;

5 a search step of executing, when the operator instructs the new search mode, a beacon detection process, comparing network identification information included in the detected beacon with the network identification information stored in the memory, continuing a detection process of another beacon if the two pieces of network identification information match, and searching for a partner wireless communication device to communicate with based on new network identification information if the new network identification information is detected;

15 a first display step of selectably displaying one device identification information found in the search step on a display unit;

a second display step of selectably displaying, when the operator instructs the history search mode, the device identification information stored in the memory on the display unit; and

20 a wireless communication establishment process step of executing, when one device identification information displayed in one of the first and second display steps is selected, a wireless communication establishment process on the basis of the selected device identification information.



- 43 -

15. A method of controlling a wireless communication device, comprising:

a determination step of determining a designated process type; and

5 a display step of displaying information associated with a device having a function of the process type determined in the determination step on the basis of signals informed by another devices on a display unit.

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